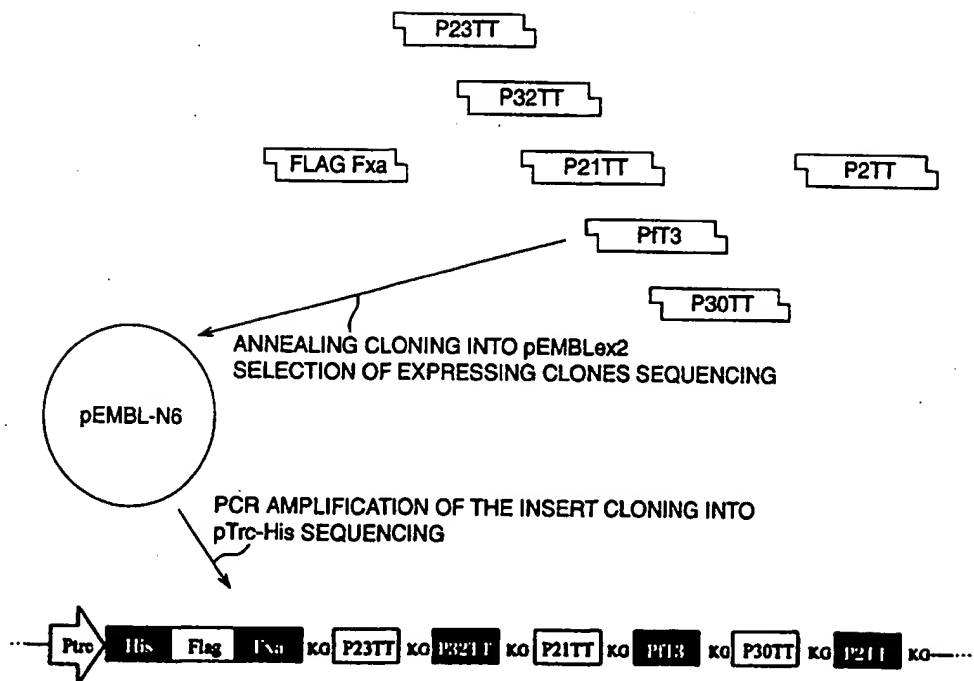


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁶ : C07K 14/33, 14/445, 14/02, 14/11, 14/34, 14/22, 14/235, C12N 5/10, 15/62, A61K 39/02, 39/12, 31/715, 67/027</p>	<p>A2</p>	<p>(11) International Publication Number: WO 99/55730</p> <p>(43) International Publication Date: 4 November 1999 (04.11.99)</p>
<p>(21) International Application Number: PCT/IB99/00844</p> <p>(22) International Filing Date: 27 April 1999 (27.04.99)</p> <p>(30) Priority Data: 9808932.9 27 April 1998 (27.04.98) GB</p> <p>(71) Applicant (for all designated States except US): CHIRON S.P.A. [IT/IT]; Via Fiorentina, 1, I-53100 Siena (IT).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): RAPPUOLI, Rino [IT/IT]; Via delle Rocche, 1, Vagliagli, I-53019 Castelnuovo Berardenga (IT). GRANDI, Guido [IT/IT]; 9A Strada, 4, I-20090 Segrate (IT).</p> <p>(74) Agent: HALLYBONE, Huw, George; Carpmaels & Ransford, 43 Bloomsbury Square, London WC1A 2RA (GB).</p>		<p>(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p>Published <i>Without international search report and to be republished upon receipt of that report.</i></p>

(54) Title: POLYPEPTIDE CARRIER PROTEIN



(57) Abstract

The invention relates to polypeptide carrier proteins that comprise at least five CD4⁺ T cell epitopes, for conjugation to capsular polysaccharides. The carrier proteins are use useful as components of vaccines that can elicit a T-cell dependent immune response. These vaccines are particularly useful to confer protection against infection from encapsulated bacteria in infants between the ages of 3 months and about 2 years.